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A COMPARATIVE STUDY ON TRADITIONAL LEARNING AND WEB BASED LEARNING

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ABSTRACT

In this study an attempt has been made to compare the two types of instructional strategies i.e., traditional learning is compared with web based learning in terms of scholastic achievement of Secondary School Students in Biological Science. In this study, 100 students studying in IX standard for the academic year 2018-19 were drawn as sample using purposive sampling technique. The students of the control group were taught by traditional method and the students of the experimental group were taught by web based learning. Selected topics from Biological Science were taught to the students of both the groups. Learning outcomes in Biological Science of students who learnt from traditional learning and those who learnt from web based learning were measured with the help of academic achievement tests (pre-test and post-test) which are constructed and validated by the researcher. The collected data were analyzed by using differential statistics.

The results revealed that, the students of Control and Experimental groups have similar Pre-test scores of Academic Achievement in Biological Science and the students of Control and Experimental groups have different Post-test scores of Academic Achievement in Biological Science.

Key words: *Traditional learning, web based learning, academic achievement, secondary school students, Biological Science etc.,*

INTRODUCTION

The system and structure of school education have undergone tremendous changes as compared with the school education that was prevailing in the past. The schools of the

present day are well furnished and equipped with the technological tools of the modern age and teachers mastered in e-skills. The use of ICT tools such as projectors, DVDs, smart boards and other devices implies that India is also developing in par with other developing nations of the world. India is now designated as one of the best education providers of the world. But the system of school education differs in rural areas as compared with the schools in the urban area. Liberalization, Privatization and Globalization have a bearing effect on e-learning also. In the present educational scenario, the pupils can take the benefit of lectures that are being delivered at a remote place irrespective of their location by virtue of online learning. This has become possible because of the Internet and the World Wide Web.

During the last few years the world has witnessed anomalous growth in the field of information and communication technology. The technological tools and broad band communication services of the digital era have made it possible to adopt them in the system of school education. They also provide with the opportunities of integration and interaction of teachers and students irrespective of their place and thereby help to achieve the pre-determined goals and objectives of teaching and learning. The ease of use of computer and communication systems, the ability of information sharing and transfer within fraction of a second, enabled the teachers and students to access the educational information beyond the four walls of the classroom (Majumdar, 1997). ICT tools also have the capacity of transforming the nature and process of learning environment and envisage a new learning culture. ICT powered teaching-learning environment offers interactivity, flexibility and convenience both for the teachers and the pupils. ICT makes it possible for the learners to access, transform and share the information by giving scope to communicate in various styles and formats. They also promote learner centered collaborative learning principles and thereby enhance creative thinking, critical thinking and problem solving skills.

Literature Review

A significant difference between the academic performance of the students of both experimental and control group was found as WBI provides multisensory experiences to the learners in a study conducted by Sudha and Amutha (2015).

ICT has tremendous impact on the students' academic performance was revealed in the study conducted by Ubulom et.al (2016).

An Experimental Study on Web Based Learning was conducted by Shailaja (2017) for ascertaining the secondary school students' scholastic achievement. The results showed that, web based learning improves the teaching effectiveness. It also suggests that, the teacher must know the use and application of new technological aids in routine classroom activates

and should have thorough knowledge of technology and its applications so that he or she can easily convey the learning concepts on to the students. This study recommends adopting web based learning in the secondary schools.

In a meta-analytic study by Aravind (2018) it was found that, web based learning is an innovative teaching strategy of teaching Biological Sciences at secondary school level.

Need and Importance of the Study

The system of education has undergone a phenomenal change during the past few decades. The change from traditional instruction to virtual learning environment due to adoption of technological aids, the model, focus, role of the learners and technology have been changed.

Mastering ICT skills in this techno-challenging world is not enough, but also using ICT as an instructional strategy is of great importance for the teachers in discharging their duties effectively and meaningfully. Precedents provide evidences on the effectiveness of ICT tools in school education. As the teachers become increasingly supported by ICT, teaching and learning will not be the same as before. The goal and vision of the technological era can only be fulfilled by adoption and use of advanced technologies in teaching. The fruitful outcomes of integrating ICT tools in the system of education can be appreciated only by taking into account the tremendous changes that took place in the last few decades.

Changes in the system of education demand techno-powered learning environment to bring qualitative improvement in learning. The nature of education has been transformed by virtue of ICT. It gives rise to a knowledge community paving way for lifelong learning with infotainment.

Improving learning, motivating and engaging pupils in learning, increasing collaboration, fostering the cognitive skills and creating pupil centered approach are the main aims of inclusion of ICT in pedagogy. The transformation from reproductive model of teaching and learning into a self dependant, autonomous learning model that develops various psychological skills of creativity, abilities of critical thinking, convergent thinking and divergent thinking are fostered by the use of technology.

With the emergence of technologies, it has become imperative to take comprehensive look at all possible e-resources for improving school education. The comprehensive use of ICT and its tools for holistic development of education is of prime concern. The use of ICT tools in school education is inspired by the tremendous potential of ICT for transcending and improving the quality of education.

The application of the theories, doctrines, innovations and applications in teaching-learning activities to facilitate learning which aims at improving scholastic achievement of the students by using suitable technologies which is the basic needs in today's education. Hence, this study.

Objectives of the Study

1. To compare traditional learning with web based learning in terms of academic achievement of students in Biological Science.
2. To identify the differences, if any, in academic achievement of students of control and experimental groups with respect to academic achievement in Biological Science.

Limitations of the Study

1. The present study is limited to comparing web based learning with traditional teaching.
2. The present study is limited to the subject Biological Science only.

Variables of the Study

Independent Variables : (a) Traditional Method of Instruction
(b) Web Based Method of Instruction

Dependant Variable : Academic Achievement in Biological Science

Methodology

The study has been conducted by employing experimental method.

Population

In this study, Secondary school students (IX grade) studying in the academic year 2018-19 were considered as population of the study.

Sample

The purposive sampling technique was used to draw the sample. The sample consists of 100 pupils, among them 50 students constituted control group and 50 students constituted

experimental group classified based on their intelligence by administering Raven's Standard Progressive Matrices.

Tools used for collection of data

The following tools were used for the collection of data:-

- Raven's Standard Progressive Matrices,
- Web based learning package compiled and validated by the researcher,
- Achievement tests (pre-test and post-test) in Biological Science constructed and validated by the researcher.

Statistical Techniques

The collected data was analyzed by using differential statistics and the results obtained there from were represented through the graphs.

Hypotheses

H^1 : There is no significant difference between the Pre-test Academic Achievement scores in Biological Science of the students of Control and Experimental groups.

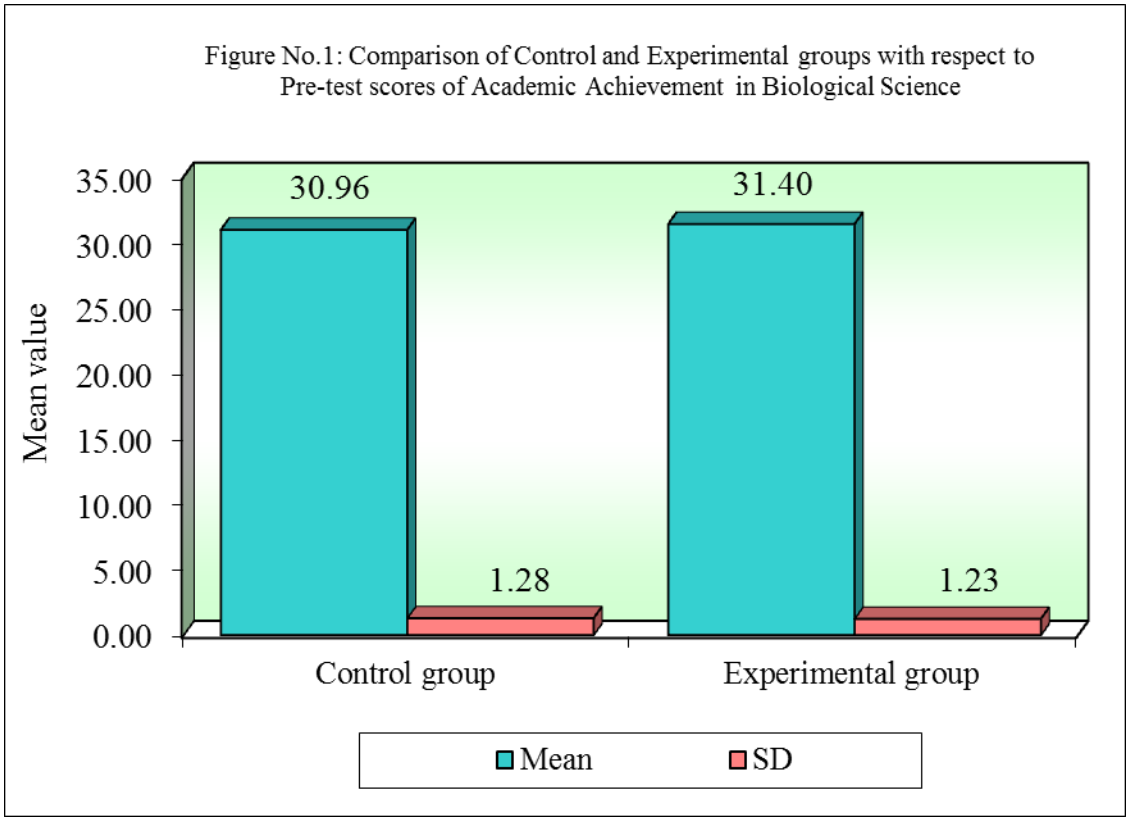
To test this hypothesis, the unpaired 't' test was applied and the results are presented in the following table.

Table No.1: Results of 't' test between Pre-test Academic Achievement scores of Students of Control and Experimental groups in Biological Science.

Group	Mean	SD	t-value	p-value	Signi.
Control group	30.96	1.28	-1.7554	0.0823	
Experimental group	31.40	1.23		>0.05	NS

From the above table, it can be observed that, the students of Control and Experimental groups do not differ significantly with respect to Pre-test Academic Achievement in Biological Science (t=-1.7554, p>0.05) at 5% level of significance. Hence, the null hypothesis is accepted. It means that, the students of Control and Experimental groups have similar Pre-test scores of Academic Achievement in Biological Science.

The Mean and SD Pre-test Academic Achievement scores in Biological Science of students in Control and Experimental groups are also presented in the following figure.



H^2 : There is no significant difference between the Post-test Academic Achievement scores in Biological Science of the students of Control and Experimental groups.

To test this hypothesis, the unpaired 't' test was applied and the results are presented in the following table.

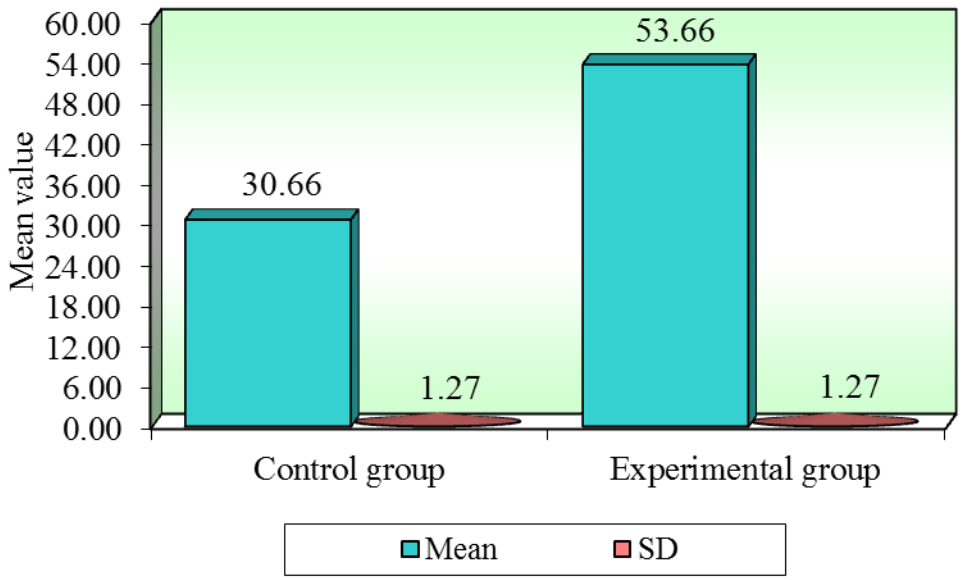
Table No.2 : Results of 't' test between students of Control and Experimental groups with respect to Post-test Academic Achievement scores in Biological Science.

Group	Mean	SD	t-value	p-value	Signi.
Control group	30.66	1.27	-90.4437	0.0001	
Experimental Group	53.66	1.27		<0.05	S

From the above table, a significant difference was observed in the Post-test Academic Achievement scores in Biological Science of the students of Control and Experimental groups (t=-90.4437, p<0.05) at 5% level of significance. Hence, the null hypothesis is rejected. It can be concluded that, the students of Control and Experimental groups have different Post-test scores of Academic Achievement in Biological Science.

The Mean and SD Post-test Academic Achievement scores in Biological Science of students in Control and Experimental groups are also presented in the following figure.

Figure No.2 : Comparison of Control and Experimental groups with respect to Post-test scores of Academic Achievement of students in Biological Science



Findings

1. The students of Control and Experimental groups have similar Pre-test scores of Academic Achievement in Biological Science.
2. The students of Control and Experimental groups have different Post-test scores of Academic Achievement in Biological Science.

CONCLUSION

Technology works as an input in the creation of skilled human resources. It helps in developing the citizens of the tomorrow as national assets apart from making them educated. Therefore knowledge of technical skills has become the need of the hour to make the students as successful global citizens.

Thus, it can be said that, educational technology revolutionizes the traditional methods used by the teachers and thereby acts as a catalyst for fundamental change in the way students learn and teacher teach.

REFERENCES

1. Agarwal., J.C. (2011), Essentials of Educational Technology- Innovations in Teaching-Learning, 2nd Edition, *Noida, Vikas Publishing House Pvt Ltd.,* ISBN: 9788125922933, Pp 5-7
2. Amutha S and Sudha A (2015), Higher Secondary Learner's Effectiveness Towards Web Based Instruction (WBI) on Chemistry, *Universal Journal of Educational Research*, Vol.3, No.7, http://www.hrpub.org, Pp 463-466
3. Aravind V.K and Shivakumar (2018), "Web Based Learning - An Innovative Strategy of Teaching Biological Science", Published in Conference Proceedings in a book entitled: "Use of Computer in Higher Education in Rural Area", *Sanwad Pro. Pvt. Ltd., Kolhapur*, ISBN: 978-93-87322-09-7, Pp 184-188.
4. Best., J.W. (1996), Research in Education. *New Delhi: Prentice Hall of India Pvt. Ltd.*
5. Majumdar, S. 1997. *Network based flexible learning: Prospects and challenges in the 21st Century:* Invited keynote address at the International Conference of Vocational Education and Training (IVETA "97), Helsinki, Finland. August 24-28.
6. Mangal., S.K. (2010), Advanced Educational Psychology, *Delhi, Prentice Hall of India for Learning, 2nd Edition*, ISBN: 9788120320383, Pp 1-536
7. Neo, M., & Neo, T. K. (2001). Innovative teaching: Using multimedia in a problem-based learning environment. *Educational Technology & Society*, *4*(4), 19-31.
8. Shailaja H.M (2017), An Experimental Study on Web Based Learning, *Unpublished Ph.D thesis*, Rani Channamma University, Belagavi
9. Ubulom W.J et.al (2016), "Information and Communication Technology Business Studies Student's Academic Performance in Upper Basic Education in Tai Local Government Rivers State Nigeria", *International Journal of Innovative Social and Science Education Research 4 (1),* ISSN: 2360-8978, Pp 1-7